72 ~~109.~~ (New) Blocks of Claim ~~107~~ 80 which are vertically cored.

73 ~~110.~~ (New) Blocks of Claim ~~107~~ 70 or ~~108~~ 81 in which a handle is formed in the lower surface.

D11

74 ~~111.~~ (New) Blocks of Claim ~~107~~ 70 in which the at least a portion of the lower surface is planar and parallel to said upper surface.

75 ~~112.~~ (New) Blocks of Claim ~~111~~ 74 in which the entire lower surface is planar.

Remarks

At the outset, the Applicants wish to thank the Examiner for the personal interview which was afforded Applicants' counsel, Cecil Schmidt, on 26 October 1999. This Amendment summarizes the discussions of the interview during which the art of record, the amendments to the claims, and the proposed new claims 103–112 (incorrectly identified during the interview as new claims 102–111, respectively) were discussed. During the interview, the Examiner suggested several modifications to the proposed amended and new claims, and the Examiner's suggestions have been incorporated into the claims as presented herein.

The invention underlying this patent application has proven to be very successful commercially. This application is the continuation of an earlier application, SN 921,481 (Sept. 2, 1997), which resulted in U.S. Patent No. 5,827,015 (the '015 patent). The file of that patent includes substantial evidence of commercial success, and the Examiner is referred to that file. The commercial success continues. By the time the '015 patent issued in late October, 1998, corresponding patents had been issued in Canada and Australia, the assignee of the present application (Anchor Wall Systems, Inc., herein called "Anchor") had licensed more than 50 manufacturing facilities in the U.S. to make and sell the patented masonry blocks, many millions

of the patented units had been made, sold and installed in the United States, and many unauthorized companies had copied the product. Subsequent to the issuance of the '015 patent, some of the largest of these companies (Keystone, et al.) commenced litigation to declare the '015 patent invalid. These companies subsequently agreed to a dismissal with prejudice of their complaint, and entered into a royalty–bearing license agreement with Anchor. As a result of this agreement, more than seventy five additional facilities were licensed under the '015 patent. Other large U.S. manufacturers also have taken licenses under the '015 patent since its issuance.

Shortly prior to the issuance of the '015 patent, Anchor became aware that a fully cored version of the patented product has advantages in certain applications, and determined to file this continuation application to pursue any claim coverage that might be available for such configurations of this block. In addition, Anchor has become aware that certain copiers are making minor modifications to their product offerings in an attempt to avoid the literal coverage of the '015 patent, while at the same time enjoying the benefits of the basic invention. These modifications primarily take the form of slight modifications of the side and/or bottom surfaces of the block, much like changing the soles on shoes without changing the size of the shoe or significantly altering the function of the shoe. The modifications have included: (a) forming recesses or indentations in the sidewalls to allegedly function as "handles"; and (b) modifying part of the bottom of the block, such as by keeping the front and rear portions of the bottom flat and parallel to the top of the block and then adding indentations in the center portion of the bottom of the block which are not seen in a finished retaining wall and do not add meaningful functionality to the product (such indentations being solely for the purpose of allegedly altering the lower surface area of the block while maintaining the same "footprint" or projected lower surface area of the block). Although it is believed that much of this activity is embraced by one or more claims of US 5,827,015, the present claims have been drafted to leave no doubt as to the

scope of protection to which this important invention is entitled. To avoid any question of double patenting, a terminal disclaimer is being filed herewith.

Turning now to the present invention, there have been many retaining wall block designs in the prior art. None known to the applicants, however, comprise the unique combination of features embodied in the block of their design which are the subject of the present application. This unique combination of features results in a retaining wall block with significant advantages over the prior art.

In the following remarks, the applicants have described some of the advantages of the preferred embodiments of their invention, and then responded to the objections made by the Examiner.

Various amendments to the claims have been made for clarification. The concept of "setback" ("setback" is a horizontal distance, while "batter" refers to the angle by which a wall departs from vertical) is found in the specification including page 2, line 12. Reference to the "pinless" feature of the present blocks is found in the specification, including page 13, lines 24–25. The term "uninterrupted" (suggested by the Examiner) has been used to highlight the fact that the upper surface of the present blocks does not need to be marred with holes, noting that a tubular hole or recess which extends partly or totally through a block in a vertical direction is a common characteristic of prior art blocks which have used pins to position and connect successive rows or courses of blocks into an integrated wall. Unlike the prior art blocks, such holes are not a required part of the blocks of the present invention, which do not rely on pin connectors. Reference to "mortarless" is found throughout the specification where reference is made to stacking the blocks, one course of blocks over the next. Such a mortar–free method of wall construction is often referred to in the industry as "mortarless" or "dry stacked" (dry having reference to the lack of wet mortar to bond the blocks to each other). Reference to "courses" appears in the specification at such places as page 11, line 2. The drawings (e.g. Figures 1,2 and

8) show an indentation or depression at the forward edge of the converging sidewalls (the sidewalls are converging in a rearwardly direction). This depression or indentation (vertical as shown) was to facilitate positioning the block for splitting during the manufacturing process. Cores, as known in the industry, are larger openings in blocks which extend at least partially through the block from bottom to top, although they can go entirely through a block. When they go entirely through a block from top to bottom they are filled during use with gravel or other material. Alternatively, cores can extend through a block from side to side, but such horizontal or side–to–side cores are often more difficult to manufacture, and they are not easily filled with gravel, etc. Cores are shown and discussed in the specification in connection with Figures 11–13. The provision of handles on the blocks to facilitate transport and placement of the blocks is discussed on page 18 at lines 20–23.

A "One Block" System in its Preferred Form

Unlike the prior art blocks, the preferred design of the present block creates a "one block" retaining wall system. By that we mean that with blocks of just one shape (which blocks are not fully vertically cored through the top surface and are uninterrupted by holes in the top surface of the block for receiving connecting pins), walls having straight sections, outside radius curved sections, and inside radius curved sections can be constructed without the need to cut or break blocks other than for the purpose of cutting a few blocks to adjust to the increasing or decreasing length of courses and maintain bond (block alignment or overlap) as walls are constructed higher and higher with some degree of batter or setback, and that no top cap or end cap blocks are required to cover openings or protrusions, although such cap blocks can be used and would likely be used if the blocks had holes in their upper surfaces for receiving pins or were fully vertically cored to reduce block weight and permit infilling.

The preferred one block system is attractive to the end user of the blocks (especially end users such as homeowners who purchase their blocks from do–it–yourself stores), because the user does not have to plan for, or purchase, multiple block shapes to build a wall. The preferred one block system is even more attractive to manufacturers and vendors, because they don't have to invest in multiple molds to make multiple shapes, and they don't have to inventory multiple shapes.

Features of the preferred block design that make it a one block system include the following:

- the generally planar orientation of the rear surface of the block, together with the rear lower locator lip, facilitates alignment of straight wall sections;
- the rearwardly–converging sidewalls, and the optional but preferred forwardly–converging decorative faced side wall portions (of a 3 faceted front face) permit the construction of outside radius sections with no forwardly–facing gaps in face of the wall (the forwardly–converging portions of the side walls could perhaps be thought of as diverging portions of the decorative front face of the block) ;
- because of the design of the lower rear locator lip, contact between the locator lip and the rear surfaces of the two immediately adjacent blocks in the next lower course is maximized, to thereby facilitate the construction of inside radius curves;
- in addition, because the locator lip extends from the lower rear surface of the block, and the top surface of the block is preferably solid and unbroken or uninterrupted (without holes for receiving and supporting pins), one can avoid gaps or overlaps (shown and described in the cited Keystone brochure) between adjacent blocks in the wall in inside or outside radius curves, and any

cosmetic damage suffered by the locator lip during manufacture or shipping will not be visible in a finished wall;

- because the preferred top surface of the block is solid, without interruptions by recesses, cores, or protrusions, no cap blocks are required to finish a wall. However, if a cored block is used, some cap block would be desirable.

High Speed Manufacture

By virtue of its design, the block is adapted for manufacture on automated, modern, high–speed block or paver manufacturing equipment. This equipment includes a block or paver–making machine, curing equipment, splitting equipment, packaging equipment, and transport and handling equipment to move the masonry units through the various stages of the production line.

The high–speed block or paver machine forms blocks in a mold having an open top and an open bottom, which rests on a moveable pallet. This pallet, commonly referred to as a machine pallet, is typically a flat steel plate. A common dimension for the machine pallet used in one of the most commonly encountered block machines in the United States (a Besser block machine) is 18 ½" x 26". Larger block machines, capable of handling a larger machine pallet are available. Most pallet–type paver machines use a larger machine pallet.

These machines fill the mold with a composite masonry mix. They then compact the mix by a combination of vibration of the mold or the pallet and downward pressure exerted by a compression head acting on the mix through the open top of the mold.

Thereafter, the molded unit is stripped vertically from the mold through the open bottom of the mold. This is typically accomplished by the combined action of the compression head moving down through the mold, and the pallet moving down and away from the mold.

These machines can cycle on the order of five to ten times per minute. A single mold can be used on the order of 60,000 to 300,000 cycles before it is worn out.

After a shaped but uncured block has been stripped from the mold, the uncured unit is self–supporting on the machine pallet. This uncured, molded unit is then transported on the machine pallet to a curing location, such as a kiln, where it is held for a suitable period of time on the machine pallet. Once it has been sufficiently cured, the unit is transported on the pallet from the curing location to a depalletizing station, where the cured unit is removed from the steel pallet. The machine pallet is then routed back to the molding station, and the cured unit is routed through an optional splitting station (assuming a hard split surface is desired), a packaging station, and, finally, to a storage location.

To take advantage of this high speed equipment, the block must be of such a shape that the mold can easily and quickly fill with composite masonry mix. It must be of such a shape that it can strip cleanly from the mold. It should be of such a shape that it can be handled with a minimum of manipulation, such as flipping or spinning once it is stripped from the mold.

Features of the present block which facilitate its manufacture on a high speed block or paver machine include:

- the top side of the preferred form of the present block is uninterrupted (it has no protrusions or holes for supporting and positioning pins), so that it can be formed by the flat machine pallet (the block is usually formed top side down);
- usually at least significant portions of the bottom surface of the block will be generally parallel to its top surface, so that it is amenable to the pressure applied to it by the compression head of the block machine. Manufacturing the block upside down allows the locator lip to be made with adequate strength;

- the front, back and side surfaces of the block are usually substantially vertical, and generally perpendicular to the top surface, so that the unit can be formed in the mold, and stripped from the mold by the vertical action of the compression head and the machine pallet.

Although indentations or contours can be made in the sidewalls of the block and would not be seen in a finished wall except at the ends, some modifications add to the complexity of the block and are usually avoided for ease of manufacture and for the finished look of the sides of the blocks at the end of walls where they are visible. However, small vertical indentations (splitting vee's or notches) can be useful to position or facilitate splitting equipment if the masonry unit is to be split. Since the present blocks are desirably made upside down, handles can readily be made in the lower surface of the block by forming recesses or depressions in the bottom of the block which can more readily be grasped by hand. For example, two cores can be formed in the bottom of the block to produce handles, either as shown in Figures 11-13, or by moving the location of the cores to the edge of the blocks so they are in contact with the sidewalls.

Because of its design, the preferred blocks are very economical to manufacture, in contrast to blocks of unusual shapes which must be wet cast or molded by more complex methods. Wet casting requires an individual mold for each unit, and generally requires a much wetter, higher "slump" concrete mix to uniformly fill the mold, with the consequence that it takes much longer to make each block, and takes many more molds to rapidly produce a large quantity of blocks.

Also, because the blocks of the present invention are usually molded with their top side down, resting on the steel machine pallet, and the "lower" lips turned up, they can be transported

to the curing station in this position, cured in this position, and transported to the depalletizing station in this position. This reduces breakage of the lip during handling. When the cured unit is depalletized, it moves down the production line on its flat top surface and into the optional but preferable splitting station. It does not need to be flipped to enter the splitting station, where a set of vertically–oriented splitting blades act on the unit to produce the decorative front face of the finished unit (usually a flat, beveled or 3–faced decorative face). The production line can then accumulate a number of the finished units, all still lying on their top sides, and build a cube of the units on a wooden pallet for storage and transport. Alternatively, a "split" appearance for the front face(s) of the block can be achieved with the use of texturing molds. These texturing molds allow a "split–like" look to be obtained without splitting the block after curing.

The preferred block includes design features which allow it to be formed on a high–speed machine, and then cured, split (if desired) and packaged without flipping the blocks over and, therefore, it can be very economically manufactured.

Suitability of Design to a Variety of Retaining Wall Applications

Another significant advantage of the design of this block is that it can be manufactured in a variety of sizes for different applications or markets. For example, a block of this design measuring four inches high, twelve inches wide, and eight inches deep typically weighs about twenty–four pounds. Such a block is light weight enough to easily handle, and can be used to build gravity (no anchoring matrix) retaining walls up to about two feet in height. Because this size block is not too heavy, is not complicated or difficult to lay, it can be used to make walls of a height commonly needed in a residential yard. As a result, this size block is ideal for the do–it–yourself market.

A slightly larger block of the same design, having a height of six inches, a width of sixteen inches, and a depth of twelve inches, typically weighs about seventy pounds. Blocks of this size are typically too heavy for a residential do–it–yourselfer to handle. But a professional contractor can easily handle such a block, which is of an appropriate scale for many of the larger residential landscaping and commercial applications. This size block can be used to build gravity walls up to about four feet in height. Blocks of this size can also be used to build much taller walls, if a geosynthetic fabric is used in combination with the blocks. Once a course of blocks is formed, a layer of geosynthetic grid material can be laid on top of the course. The next course of blocks is then placed on top of the geogrid. The rear lip of the upper course blocks deforms the geogrid. The combination of block weight, friction and grid deformation creates a surprisingly strong connection between the grid and the blocks. Such a combination of blocks and grid, when properly engineered, can produce walls of thirty feet or more in height since the earth that is stacked between the grid acts as if it were part of the wall.

In a still larger format, a block of this design measuring eight inches high, eighteen inches wide and twelve inches deep with a solid top and two partial cores similar to that shown in Figures 11–13 weighs about eighty–five pounds. This block can be economically used by professional contractors in commercial applications and typical highway – type applications. It is with these larger blocks that vertical cores are of value in reducing weight to perhaps 72 pounds, which makes the blocks more economical to transport, and somewhat easier for a laborer to install. If the blocks are fully cored vertically (the core penetrates both the bottom and top surfaces), the hollow cores of the block must be filled with aggregate after they are laid up to form a wall. With the cores filled with aggregate, the filled unit is actually heavier in the wall than its solid top counterpart (i.e. a block without a full core), and can have some performance advantages as a consequence. However, cap blocks are then required to cover the exposed aggregate–filled cores in the top course of blocks.

No Pins, Clips or Mortar

The design of the block eliminates the necessity of using pins or clips to position or interlock the blocks in a retaining wall system. This then eliminates the need for holes or blind lumens in the upper and lower surfaces of the block which are sized for receiving and positioning the pins. By contrast with these small diameter holes for receiving and positioning pins, conventional cores tend to be much larger in diameter than the diameter of the pins. Experience has shown the rear lip to perform exceptionally well in both simple gravity wall systems and engineered block/grid combination systems. Elimination of pins and/or clips eliminates the cost of these added items, simplifies installation, and does away with the need of the vendor to stock pins or clips. Further, it allows convex walls to be constructed without creating gaps between adjacent blocks. Note that the position of the pin–receiving holes determines the spacing of pinned blocks.

Commercial Success and Copying by Others

Because of the unique combination of features outlined above, the block has achieved an extraordinary amount of commercial success as is documented in the file of the '015 patent to which the Examiner is referred. This success continues and the blocks have been licensed to manufacturers in such diverse places as Australia, China, and Europe. It is interesting to note that Keystone Retaining Wall Systems, Inc. (the source of the Keystone brochure cited by the Examiner) has been in litigation with the present assignee (Anchor) in Australia regarding the corresponding Australian petty patent, and has settled that litigation by taking a royalty bearing license from Anchor for the benefit of its Australian licensee. In a similar fashion, Keystone has taken a royalty bearing license in the US from Anchor under the '015 patent for the benefit of its US licensees.

Anchor believes that the extraordinary commercial success and copying activity are conclusive evidence of the patentability of the claimed inventions. Given the large demand for segmental retaining wall products, and the long period of time over which such products of other designs have been in existence (at least as early as 1943, as evidenced by the Schmitt U.S. Patent No. 2,313,363), if the identical block was present in the prior art, or the level of ordinary skill in the art was adequate to make the present block obvious, it would have surfaced long before applicants made their invention. It did not. And yet, when applicants introduced it, the block made a huge commercial impact and has been widely copied. Alternatives have been tried, but without the same success.

The Rejection

The claims have been rejected over US 5,827,015 for double patenting. This rejection has been avoided by the filing of the Terminal Disclaimer in the present case which causes the present claims to expire simultaneously with the claims of US 5,827,015. A related Certificate Under 37 CFR 3.73(b) is also included.

The Examiner has objected to the Abstract of the Disclosure. Accordingly, the Abstract of the Disclosure has been revised to meet the objections of the Examiner.

Claims 59–65 have been rejected under 35 USC 101 because they embrace both "product or machine and process" and because they are allegedly indefinite within the meaning of 35 USC 112. In this regard, "product by process" claims have been allowable for many years and the claims have been amended in an effort to more clearly define the products in more conventional "product by process" terms. It is believed the claims as amended totally avoid this rejection as it is understood.

Claims 30–58 and 67–102 were also rejected under 35 USC 103 as being unpatentable over the Keystone publication entitled "Beautiful Do–it Yourself Results" which is believed to have a publication date of June 27, 1988 based on the Copyright Office date stamp. The applicants do not have direct knowledge of the publication date, or, indeed if the document was ever published within the meaning of 35 USC. In any event, the block shown in this publication (which is seemingly identical in most respects except for proportions to that shown in Canadian Design Registration 62,875, previously considered by the Examiner) is fatally deficient as applied to the amended claims. The reference teaches a "pinned" block which has no lower positioning lip. This is not applicants' invention and to modify the Keystone block to the present design would take inventive effort, particularly since one would need to eliminate the pinned feature of the Keystone product which was essential to its performance and to add a feature not contemplated by the reference or the state of the art. The Keystone product (according to the cited brochure) used fiberglass pins to position the blocks. This means that the blocks were configured to receive and embrace the pins by having small diameter holes or lumens (tubular cavities partially or fully extending through the block) formed in their upper surfaces and some type of recesses in their lower surfaces to accept the pins protruding from the blocks below. See the cited brochure. On the upper surface, these holes created a pocket for trapping moisture and debris, and they were a potential site for freeze/thaw deterioration, especially on the top row or course of blocks in any wall. Further the spacing of the pins determined how serpentine walls had to be constructed. According to the brochure cited by the Examiner, convex walls required about a ½ inch gap between adjacent units, and concave walls required an overlap of blocks. By contrast, the present invention eliminates the pins, the need for holes for the pins, and the gaps/overlaps between adjacent blocks.

Because the Keystone product lacks the features of the present invention, the Keystone block is never a "one component" system for landscape application within the meaning of the present application. It requires pins, and the preferred use of cap blocks.

Turning to the pending independent claims which have been rejected by the Examiner over this reference, the Keystone publication can be distinguished from the rejected claims as follows in that the present blocks are pinless, the upper surfaces of the blocks do not require holes for receiving and supporting pins, the lower projected surface of the present blocks each have a smaller area than the projected area of the upper surface (the surface area proportions); and the present blocks have a lower lip to ensure the proper set–back

As shown in the foregoing recitation, the Keystone publication does not have a number of important features described in all the pending claims.

The Examiner has acknowledged that the Keystone publication describes a block in which the upper and lower faces have virtually identical projected surface areas or "footprints". This is an important distinction, since the lower lips of Applicants blocks are essential for positioning the blocks and embracing geosynthetic grid (when it is used). It is precisely this rear lip feature that allows the elimination of the pins used by Keystone (and the associated channels in the top face of the Keystone blocks), and causes each block to be "set back" from the block below it. This is a fundamental difference in how the blocks of the applicant and those of Keystone function. The fact that Keystone has taken a license to make blocks of the present type is a tribute to the unique nature of the present products....the lower lip makes a huge difference, especially for the do–it–yourself market.

For the foregoing reasons, reconsideration and allowance of all claims is believed appropriate. Should the Examiner have any questions or wish to discuss any aspect of this case, he is encouraged to telephone the undersigned at 612–979–8403 (direct) Monday–Thursday.

However, as the Examiner was advised during the interview, counsel will be out of the country from October 30 until November 22, returning to his office on Monday November 22.

Respectfully submitted for Applicants,

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